

# 1.1 Science and the Natural World

## Lesson Quiz

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

### Multiple Choice

*Circle the letter of the correct choice.*

- Which area of Earth science includes the study of ancient organisms?
  - astronomy
  - meteorology
  - geology
  - paleontology
- Testing a(n) \_\_\_\_\_ involves performing a(n) \_\_\_\_\_.
  - experiment, observation
  - hypothesis, experiment
  - observation, hypothesis
  - conclusion, prediction
- Scientists must understand that
  - science cannot provide answers to all questions.
  - scientific ideas are fact, and can never be revised.
  - sound scientific ideas are frequently altered.
  - nature is a constantly changing wonder, difficult to understand.
- Natural studies can be more difficult than laboratory studies because scientists
  - cannot control which factor is the dependent variable.
  - cannot control factors that might affect the variables they are investigating.
  - cannot determine which data to analyze.
  - cannot determine the best time of day to collect their data.
- Which is the correct order in a scientific investigation?
  - ask a question, test the hypothesis, communicate results, draw conclusions
  - make observations, ask a question, form a hypothesis, test the hypothesis
  - draw conclusions, ask a question, form a hypothesis, test the hypothesis
  - ask a question, make observations, test the hypothesis, draw conclusions
- A scientific theory is
  - an educated guess.
  - a guess about how or why something happens.
  - a statement that describes what always happens under certain conditions in nature.
  - an explanation for events that are generally accepted as true.
- Life on Earth was created through a method other than evolution.* This statement
  - is an example of a hypothesis.
  - can be proved using the scientific method.
  - is outside the realm of science.
  - is a scientific observation.
- An example of a dependent variable is

- (a) the amount of light plants are exposed to each day during an experimental study.
  - (b) the amount plants grow under specific conditions during an experimental study.
  - (c) the amount of fertilizer given to plants during an experimental study.
  - (d) the amount of water given to plants each day during an experimental study.
9. Examples of scientific models include
- (a) a diagram of a food chain.
  - (b) a map of the solar system.
  - (c) a model of an atom showing the location of the nucleus and the electrons.
  - (d) all of the above.
10. Science
- (a) is a way of gaining knowledge about the natural world.
  - (b) is done by following the scientific method.
  - (c) is done through scientific investigations.
  - (d) all of the above
11. *Science cannot answer all questions.*
- (a) The above statement is true because science cannot answer matters of belief.
  - (b) The above statement is true because all science is based on logic.
  - (c) The above statement is false because science can prove that life evolves over time.
  - (d) The above statement is false because science is based on observations and evidence.
12. A main difference between a scientific theory and a hypothesis is that
- (a) the theory has been repeatedly tested and proven.
  - (b) the theory must be based on scientific knowledge.
  - (c) the theory is a possible answer to a scientific question.
  - (d) all of the above

### True or False

*Write true if the statement is true or false if the statement is false.*

- \_\_\_\_\_ 13. A scientific theory is always supported by a great deal of evidence.
- \_\_\_\_\_ 14. The scientific method always begins by asking a question.
- \_\_\_\_\_ 15. Science can be used to answer all questions.
- \_\_\_\_\_ 16. Under certain conditions, a scientific law is always true.
- \_\_\_\_\_ 17. A good hypothesis is always correct.

### Fill in the Blanks

*Fill in the blank with the term that best completes the sentence.*

18. A(n) \_\_\_\_\_ tells what will happen under certain conditions.
19. A(n) \_\_\_\_\_ is a special type of scientific investigation.
20. The affected variable in an experiment is the \_\_\_\_\_ variable.
21. A(n) \_\_\_\_\_, a possible answer to a scientific question, must be based on scientific knowledge.
22. The final step in the scientific method is \_\_\_\_\_.
23. Science is a distinctive way of gaining knowledge about the \_\_\_\_\_.
24. Evidence that \_\_\_\_\_ with your prediction supports your hypothesis.

25. The theory of evolution and the cell theory are well known scientific \_\_\_\_\_.

**Short Answer**

*Answer each question in the space provided.*

26. What is a hypothesis? Give an example and describe how a scientist would try to prove the hypothesis.

27. What is a scientific theory? Describe the importance of a scientific theory. Give an example.